

PROPAGULE DENSITIES OF *MACROPHOMINA PHASEOLINA* IN SOYBEAN TISSUE AND SOIL

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SUMMARY

All current commercial soybean cultivars are susceptible to charcoal rot, a disease caused by *Macrophomina phaseolina*. Efforts to manage charcoal rot through non-genetic means have not been effective. A field experiment was conducted in 2002 through 2004 at Stoneville, MS, to determine the population dynamics of *Macrophomina phaseolina* (Tassi) in soybean stem and root tissues at harvest and in soil at planting and harvest as affected by tillage, cover crop and herbicide. Colony forming units (CFU) in soybean tissue were greater under the conventional till (CT) than no-till (NT) and were greater for hairy vetch and no cover crop than rye. Application of glyphosate did not affect the CFU in stem and root tissues or in the soil. The CFU from soil at harvest was significantly higher than at planting. The CFU in soil at planting and harvest was only affected by tillage and not by cover crop system. The CFU from stem and root tissues was greater than in soil suggesting that quantification of CFU in tissue may provide a better estimate of treatment effects at harvest. These results also suggest that charcoal rot may be better managed in the NT rather than in the CT system.